DOCUMENT RESUME

ED 170 046 PS 010 546

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TITLE The Effects of Sex-Typed Labeling on Preschool Children's Information-Seeking and Retention.
PUB DATE Mar 79
NOTE 13p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (San Francisco, California, March 15-18, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Age Differences; Cognitive Processes; *Information Seeking; Memory; *Novelty (Stimulus Dimension); *Preschool Children; Recall (Psychological); Research; *Retention; *Sex Differences; *Sex Role; Sex Stereotypes; Tactual Perception

ABSTRACT

The main purpose of this study was to address this question: When preschool children are exposed to novel objects, will their tactual and verbal information-seeking about these objects and the amount of information they remember about these same objects be influenced by whether an adult labels them as things "for girls" or "for boys"? Thirty-six white children (18 girls, 18 boys; mean age 66.2 months) participated in a semi-structured play session during which they were allowed to explore six stimulus objects, randomly arranged in three sets of object pairs (pizza cutter, burglar alarm; metal phone index with pop-up cover, magnetic nail finder; plastic number puzzle, hole puncher). At the outset of each session the experimenter named each object for the child and asked him/her to repeat and remember the name, then she randomly labeled one set of objects "for boys", one "for girls", and one "for both boys and girls" so that in each session each child was simultaneously exposed to a (a) same-sex, (b) opposite-sex, and (c) both sexes labeling condition. Later, children were asked to recall the names of objects. Findings revealed that children tactually explored less frequently, asked fewer questions and recalled the names of objects less frequently when they were labeled for the opposite sex than when they were labeled either for their own sex or for both sexes. Children also explored less and recalled the names of objects less frequently when they were labeled for both sexes than when they were labeled for their own sex. The findings also revealed that younger children's recall appeared to be slightly affected by the two labeling conditions, both sex and opposite-sex, while the other children were affected by only the opposite-sex label condition. (Author/MP)

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The Effects of Sex-Typed Labeling on Preschool Children's Information-Seeking and Retention

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PS010546

Paper presented at the Biennial Meeting of the Society for Research in Child Development, San Francisco, March 17, 1979.

Abstract

In the present study it was predicted that when preschool children are exposed to novel objects, their tactual and verbal information-seeking about these objects and the amount of information they remember about these same objects will be influenced by whether an adult labels them as things "for girls" or "for boys." As expected, the findings revealed that children tactually explored less frequently, asked fewer questions, and recalled the names of objects less frequently when they were labeled for the opposite sex than when they were labeled either for their own sex or for both sexes. They also explored less and recalled the names of objects less frequently when they were labeled for both sexes than when they were labeled for their own sex. The results were discussed both in terms of implications for adults who aim to broaden the scope of learning available to children and in terms of the need for additional research to clarify the relation between sex-typed labeling and memory mechanisms involved in facilitating or inhibiting recall.

The Effects of Sex-Typed Labeling on Preschool Children's Information-Seeking and Retention

Perhaps the most direct means by which adults socialize children into sex roles is simply to label for them what objects and activities are "for boys" and "for girls" (Mischel, 1970). In recent years, both researchers and professionals have hypothesized that this type of sex role stereotyping or labeling can have "negative effects" on children by oversimplifying their perceptions of reality and restricting their learning options (Maccoby & Jacklin, 1974; Saario, Tittle, & Jacklin, 1973; Serbin, Tonick, & Sternglanz, 1977).

The main purpose of the present study was to address this claim: When adults label particular objects for boys and others for girls, are they, in effect, restricting children's opportunities to learn more about opposite-sex-typed objects? More specifically, when children are exposed to novel objects, will their tactual and verbal information-seeking about these objects and the amount of information they remember about these same objects be influenced by whether an adult labels them as things "for boys" or "for girls?" Based on related research (Montemayor, 1974; Nadelman, 1974; Stein, Pohly, & Mueller, 1971; Kail & Levine, Note 1), it was predicted that preschool children would tactually explore more frequently, ask more questions, and remember more information on a long-term memory task about same-sex labeled objects than about opposite-sex labeled objects. Further, based on research that preschool boys are more sex-typed than girls (Maccoby & Jacklin, 1974; Stein, et al., 1971) it was predicted that the labeling effects would be greater for boys than for girls.

Method

Thirty-six white children (18 boys, 18 girls; mean age = 66.2 months, SD = 6.7 months) participated in a semi-structured play session during which they were allowed to explore the following six stimulus objects, randomly arranged in three sets of object pairs: (a) pizza cutter, burglar alarm, (b) metal phone index with pop-up cover, magnetic nail finder, (c) plastic number puzzle, hole puncher. These objects had been selected from among a larger set of objects after extensive pilot-testing (with 20 additional pre-school children and 20 college students) because they were judged to be novel and equally interesting to both boys and girls.

At the outset of each session a female experimenter named each object for the child, and then asked him/her to repeat the name, and remember it. Further, the experimenter randomly labeled one set of objects "for boys," one "for girls," and one "for both boys and girls" so that in each session each child was simultaneously exposed to a (a) same-sex, (b) opposite-sex, and (c) both-sexes labeling condition. The child was then allowed to explore the three sets of objects for a total of six minutes. The frequency of both tactual exploration and questions about these three sets of objects was scored every 19 seconds. Further, both one day and one week following the labeling session, each child was asked to recall the names of the objects. (See Table 1 for definitions of tactual exploration, questions, and recall.) Pearson correlations between two observer/raters on each of the three dependent measures ranged from .94 to .99.

Results

The basic design involved in analyzing the questioning and exploration data contained two factors--sex of child and labeling condition (same sex, opposite sex, both sexes), with labeling condition treated as a within subjects factor. Analysis of variance of the recall data included time of recall (one day, one week), as well as sex and labeling condition in the basic design. Further, preliminary inspection of the recall data revealed a possible age effect. Therefore, the children were divided at the median into two non-overlapping age groups (mean age = 60.8 and 71.6 months for the younger and older groups, respectively) and age was added as a fourth factor in the recall analysis.

Main Effects Due to Labeling Conditions

As indicated in Table 2, a significant main effect due to labeling condition was obtained for all three dependent measures. Further Duncan's multiple range tests and inspection of the means in Table 2 revealed the following:

1. As predicted, children tactually explored objects labeled for their own sex significantly more than objects labeled for the opposite sex ($p<.01$). Further, the objects labeled for both sexes were explored significantly less than the same-sex objects and significantly more than the opposite-sex objects (both p's$<.01$).

2. Children asked significantly more questions about objects labeled for both sexes than about those labeled for the opposite sex ($p<.05$). However, though the trend was in the predicted direction, the number of questions asked about the same-sex labeled objects was not significantly greater than the number asked about the opposite-sex labeled objects.

3. As predicted, children recalled the names of stimulus objects more often when they were labeled for their own sex than when they were labeled for the opposite sex ($p<.01$). Paralleling the results for tactual exploration, they also recalled the names of both-sex labeled objects significantly less than the same-sex labeled objects ($p< .05$), but significantly more than the opposite-sex labeled objects ($p<.01$).

Other Effects

In regard to recall, a significant age x labeling condition interaction effect was also obtained, F (2, 64) = 8.66, $p<.01$). Follow-up Duncan's multiple range tests demonstrated further that the difference in recall between the younger and older children under any given labeling condition was significantly different than those obtained under the remaining two conditions (all p's$<.01$). More concretely, inspection of Table 3 reveals that the younger and older children recalled a similar amount of information regarding the names of same-sex labeled objects. However, younger children, in comparison to older children, recalled less of the both-sex labeled object names but more of the opposite-sex labeled object names. Put another way, younger children's recall appeared to be slightly affected by the two labeling conditions, both-sex and opposite sex. In contrast, the older children were strongly affected by only the opposite-sex label condition.

Discussion

Results Related To The Predictions

The results confirmed our expectations that the children's exploration and recall would be significantly less for novel objects labeled for the opposite sex than for objects labeled for the same sex. While not significant, the questioning data trend was also consistent with the predition. These findings

have important implications for parents, teachers, and other socialization agents who aim to broaden the scope of learning available to both boys and girls. Clearly, if adults label novel objects as appropriate only for the opposite sex, and as a result, children's exposure to information and their retention of that information is restricted, sex-typed labeling can be considered detrimental to their learning. On the other hand, if adults refrain from sex-typing novel objects, children would be exposed to new learning experiences that otherwise would be unavailable to them.

The results, however, provided no evidence to support our hypothesis that preschool boys would be more affected by the labeling treatment than would preschool girls. Perhaps potential sex differences were elimated by what appeared to be a relatively strong labeling induction that left little doubt in either the boys' or the girs' minds that one set of objects was for one sex and one was for the other. That the induction was strong is indicated by the fact that two boys and six girls overtly reacted to the treatments by (a) seeking reassurance that they could play with the opposite-sex labeled objects; (b) making negative comments about the opposite-sex labeled objects ("Yuk, girls!"), and/or (c) refusing to look at, repeat the names of, or move near the table containing the opposite-sex labeled objects.

However, the authors speculate that sex differences in information-seeking and recall due to labeling condition may not be as readily detectable in preschool children as in school age children since it is during the latter period that differences in sex-role stereotyping becomes most evident. That is, during the elementary school years boys' preferences become <u>more</u> stereotypically masculine while girls' preferences become <u>less</u> stereotypically feminine (Marantz & Mansfield,

1977; Marcus & Overton, 1978; Nadelman, 1974). It is our view that as sex role preferences become increasingly stereotyped, children become more likely to evaluate whether their own information-seeking and collating activites are consistent with their preferences and adjust these activities accordingly. Studies are clearly needed to assess the relationship of sex-role preference to information-seeking and recall, as well as to examine possible changes in the strengths of these relationships with age among both boys and girls.

Research is also needed to delineate the memory mechanism(s) involved in facilitating or inhibiting recall due to same- and opposite-sex labels. Attentional processes don't appear to be heavily implicated since all but one child in the present study looked at and repeated the names of all of the objects when they were first presented. Further, regardless of labeling condition, the children could recall the sex-typed label for 80 percent of the objects, indicating that they were attentive while this information was being presented. The results also do not appear to be due to any reticence to recall opposite-sex labeled objects, since the children obviously tried hard to recall everything in order to examine the new objects presented during recall sessions (see Table 1, footnote a).

Perhaps the best available explanation of the recall findings concerns the differential time the children spent exploring and asking questions about the objects during the initial play period. Children could be expected to rehearse an object name and build more associations with that name as the result of exploring and asking questions about the object. There is experimental evidence to indicate that recall is facilitated by tactual exploration (Pick, Frankel, & Hess, 1975) and questions (Ross & Killey, 1977).

Other Results

Turning to the age effects on recall, it was interesting that the older children not only failed to outperform the younger children in recalling the same-sex objects, they performed more poorly than the younger children in recalling the opposite-sex objects. It is unusual to find older children performing more poorly than younger children on any memory task, including those dealing with sex-typed materials (Nadelman, 1974; Kail & Levine, Note 1). In the authors' view, the use of novel stimuli in assessing the effects of sex-typed labels was responsible for removing the typical age effects (i.e., superior performance by older children). It also provided evidence that with age, opposite-sex labels become more significant in influencing recall. It is, of course, possible that the same-sex labels also become more salient to children with age. However, this was not evident in the present data perhaps because of ceiling effects involved in the nearly perfect recall of the same-sex objects (i.e., mean scores of 14+ out of 16 possible).

Finally, the age difference in the both-sexes label condition is interpreted to be due to the younger children's misunderstanding of the term "both." There is evidence to indicate that young children often misunderstand logical terms like "both," as for example, in Kavanaugh's (1976) findings that preschoolers often interpret the words "more" and "less" synonymously. Perhaps some of the younger children in the present study interpreted the label "for both boys and girls" to mean "for neither boys nor girls," and therefore did not store the information for later recall.

Aside from studying young children's acquisition of the concept "both," future research attempting to use a condition intermediate between same-sex and opposite-sex labeling conditions might employ a no-label control group as a means of eliminating age effects resulting from labeling confusion. This group would probably only be feasible in a between-subjects design approach to the problem, however, since children receiving simultaneous information that some objects are "for boys" and others "for girls" would undoubtedly want to know who the non-labeled objects were for

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Table 1

Dependent Measures

The dependent measures were operationalized as follows:

Tactual Exploration - combined measure of sustained visual attention (at least 2-3 seconds) and tactual contact with the stimulus object within successive 10-second intervals such that a score from 0-36 could be obtained for each set of objects during a six-minute session.

Questions - the number of information-seeking questions directed to the novel objects concerning their function and/or origin (e.g., "How does it work?" "Where did you get it?"). Questions concerned with identifying the objects (e.g., "What do you call this?") were not counted since this information had been provided by the experimenter.

Recall[a] - scored at both one day and one week following the labeling session on the following 4-point scale.

1 = No response or incorrect response (e.g., "pliers" instead of "hole-puncher;

2 = One part of the object's name was used, a synonym was used, and/or some description of the object's function was fairly accurate but not complete (e.g., "holer" instead of "hole puncher");

3 = All parts of the object's name were used but in slightly different form than given by the experimenter; often the object's function was implied by a supplementary statement (e.g., "It's a thing that punches holes in paper" instead of a "hole puncher");

4 = Exact answer as provided by the experimenter (e.g., "hole puncher").

[a]In order to eliminate the possibility that children were somehow unwilling to recall certain items, the items not recalled were presented again, with the inducement that they could look at some new play materials if they tried hard to remember everything. No child was able to recall any more items under this inducement, though it was apparent that they tried, and were interested in examining the new objects.

Table 2

Mean Tactual Exploration, Questioning and Recall Scores By Labeling Condition

Measure	Labeling Condition			p
	Same Sex	Both Sexes	Opposite Sex	
Tactual Exploration	18.2	11.2	6.0	<.01
Questions	1.4	2.0	.6	<.05
Recall[a] (1 day & 1 week combined)	14.2	12.2	8.8	<.01

[a]Scores ranged from 4 to 16 (i.e., a child could obtain a score of between 2 and 8 for each object set at both one day and one week).

Table 3

Mean Recall of Object Name Scores By Labeling Condition and Ages of Children[a]

Age Group	Labeling Condition		
	Same Sex	Both Sexes	Opposite Sex
Young	14.0	10.9	10.2
Old	14.3	13.7	7.4

[a]Recall scores ranged from 4 to 16 (i.e., a child could obtain a score of between 2 and 8 for each object set at both one day and one week).